

Social Network Prediction Measurement in Education

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ABSTRACT

Many millions of people on a regular basis use online social networking (OSN) sites such as Facebook, Twitter and Myspace. Social media is very prevalent among young adults over the last decade. It has high influence among students. The social media and custom usage of social media has on unintended effect in the social communication and interpersonal relationships and self-concept among college students. This study moreover aims to examine predictors for students' perceived helpfulness of social media and the use of it in education. From the result of the study, the social media can be considered as one of the education tools.

Keywords : Prediction, Statistical Measurement, Social Media Analysis, Educational Tool.

I. INTRODUCTION

Social media is frolicking an imperative role in circadian practices of communication with people all over the world. It has been widely flourished among popular with young adults over the last decade. Growth in web-based technologies has enlarged the use of interactive social media that enables users to upload images and videos on the Internet. Students have access to all type of facts on the palm of hands through their cell phones, iPads and other handheld devices. These handheld devices provide us with a weather forecast in ten seconds or less, e-mails, banking, and most importantly, social media. Social media, such as Facebook, Twitter, etc., has taken the technology world to a completely new level. This paper emphasis on the educational role of social media for learning.

There are many features of social media tools for the improvement on educational processes. It can be used in education processes of improving communication skills of students and teachers, expanding participation, capacitate peer support, realization of collaborative learning. Social media also provides facilities that are enriching the learning and teaching processes with text, video, audio materials, supporting learning processes of students and supporting teachers' teaching and evaluation processes. This study have examined social media and the effects of social media usage on their learning. This study aims to describe the usage of

social media as an educational tool of students. It also aims to examine predictors for students' perceived helpfulness of and the use of social media in education.

II. LITERTURE REVIEW

Jieun Limet al., had taken the questionnaire to identify student's use of social network sites and perceptions of using SNS for educational purpose. Data was collected through the Qualtrics online survey software. The survey consisted of two parts; the social networking use survey and the social presence survey. The author has to be calculated descriptive statistics (Frequency, Percent, Mean and Standard deviation) to examine students' perception of using SNS for educational purpose. This studied also identified positive correlation between the intensity of using SNS and students perceptions of using SNS for educational purposes. [1]

Abu ElnasrE.Sobaihet al., described the use of social media as effective teaching and learning tool higher education in developing countries. Pretested questionnaire was used as a survey instrument to investigate different aspects as perceived by faculty members. The Statistical package for social science (SPSS version 21) was used as questionnaire data analysis tool. Techniques like descriptive statistics, Paired -sample - t- test and Eta Squared to provide an

indication of the use of social media in education. The author said that Social media is an emerging interactive learning tool in higher education and have a unique advantage in communication and connecting students and faculty in virtual community.[2]

Reynol junco et al., developed a survey questions for usage of Facebook. Two variables were created from Facebook usage to measure how much time students spent multitasking (doing school work at the same time as using Facebook) and a measure of how much non multitasking time student spent on Facebook. Analyses of variance (ANOVA) tool in Tukey's Honestly Significant Difference, Post- hoc tests were used to evaluate differences in time spent on Facebook among students whose were in different grade. Hierarchical Linear regression analyses were conducted within each class rank to determine which Facebook use variables predicted overall college GPA. The result shows that students interact less with Facebook as the progress in class standing.[3]

Tugberk kaya et al., said that to examined students behaviours on Facebook, whether there was a positive relationship between confidence and social media participation was analysed. This research focused on to determining the social network use of students, and to figure out respondents' behaviours among the face book use. Questionnaire has been used as a methodology tool prepared by the author. This method evaluated the confidence level and the effect of educational studies. In this paper, T-test One way ANOVA and mean statistics were calculated by using IBM SPSS statistics, helped to observe the students behaviors on social media.[4]

Sujeatkumar Sharma et al.,illustrated to predict that affected students' intention towards academic use of facebook. The result obtained from Structured equation modeling. It showed that resource sharing is the most influencing determinant in the decision of facebook usage in higher education. The SEM was used as input to the neural network model and results showed that collaboration is the most important predictor of facebook adoption for academic purposes. This study can be used to enhance the use of social media tool like facebook for teaching and learning purposes. And also analyzed facebook adoption for academic purposes by using a linear and nonlinear modeling. A survey question was designed to collect

data from undergraduate students to examined the hypothesis of this study. The author proposed the neural network model developed using SPSS 21.0 was performed using the multilayer perception training algorithm to predicts the factors influencing the students intention towards facebook usage in higher education.[5]

WaleedMugahed Al-Rahmiet al.,illustred the potentials of social media in the academic setting by collaborative learning and improve the students' academic performance. The data was collected by way of survey questionnaire. SPSS application was used to analyze the data. The author said that three predictors of using social media for improve students' academic performance. They are collaborative learning among students, interactivity with peers, interactivity with teacher and engagement. The author used Pearson correlation to prove the student academic performance in social media. [6]

Ali Mohamed Elkasehet al., said that social networking media have offered new opportunities for sharing, creating and interacting between students and teachers. A quantitative research method was employed utilizing survey method. Research data collected from a sample of teachers and students from four universities in the Libyan higher educational sector. The author proposed a research model for structure equation modelling was carried out to examine the predictive behaviours of students and teacher. The aim of this paper helps to predicting a students' and teachers behaviour intention to use social networking media for e-learning in Libyan higher education.[7]

Olutola et al., described social media utilization and study habits of students of tertiary institutions in katsina state. The descriptive survey design was adopted for this study. Analysis of data was carried out using frequency, percentage, mean, t-test, regression and pearson correlation statistics at 0.05 alpha level. The author said that the use of social media is an important factor in predicting students study habit. This studied revealed that the more the use of social media by the students. The positive use of social media should be encouraged to improve students' performance and to increase their study habit in tertiary institutions. [8]

M.I.Lopez et al., described about to predict the final marks in a university course on the basis of forum data. Several clustering algorithms using the proposed

approach were compared with traditional classification algorithms in predicting whether students pass or fail the course on basis of their Moodle forum usage data. They used different classification algorithms they are Rules-based algorithms, Tree –based algorithms, Randomforest, Function-based algorithms Bayes – based algorithms. All the algorithms obtained a good accuracy with more similar values. The author said that students who show a great level of participation in the forum was classified as PASS, and students who show a very low level of participation in the forum are classified as FAIL.[9]

Xing Wanli et al., illustrated Learning analytics approaches, educational data mining and HCI theory to explore the development of more usable prediction models. They used the approach an advanced modelling technique; Genetic Programming underlies the developed prediction model. Three genetic operations are crossover, selection and mutation. This paper describes a methodology, which connects perspectives from learning analytics, EDM, theory and application to solve the problem of predicting students’ performance in a CSCL learning environment. [10]

III. EXPERIMENT METHODOLOGY

For this study data was collected through offline questionnaire. The survey consisted of two parts; The Social Networking Use Survey and the Social Presence survey. The Social Networking Use Survey consisted of four sub-categories: 1) demographic items, 2) general information about the use of SNSs, 3) intensity of using SNSs, and 4) perceptions of using SNSs for educational purposes. The questions were created based on the review of the previous research on educational use of SNSs. This study investigated how research and instructors have studied potential benefits of using SNSs for learning and have used SNSs for an education purpose. Next, five-Likert scale had been developed to measure how student perceive the potential benefit of using SNSs in an educational environment. SPSS is a Windows based program that can be used to perform data entry and analysis and to create tables and graphs. SPSS is capable of handling large amounts of data and can perform all of the analyses covered in the text and much more. SPSS is commonly used in the Social Sciences and in the business world.

Linear regression is used to specify the nature of the relation between two variables, which means predicting the value of some other called dependent variable by giving the value of one variable called independent in SPSS. For example, Linear regression uses the values from an existing data set consisting of measurements of the values of two variables, X and Y, to develop a model that is useful for predicting the value of the dependent variable, Y for given values of X.

Linear regression attempts to model the relationship between two variables by fitting a linear equation to observed data. One variable is considered to be an explanatory variable, and the other is considered to be a dependent variable. For example, a modeler might want to relate the weights of individuals to their heights using a linear regression model. A linear regression line has an equation of the form $Y = a + bX$, where X is the explanatory variable and Y is the dependent variable. The slope of the line is b, and a is the intercept (the value of y when x = 0).

The students were asked to choose one or more than one option in the questionnaire tool. The following table2 shows the percentage of users in different social media. 25% students use to let others know what is happening in my life 100% to keep in touch with friend, 50% to connect with people I have lost touch with, 100% To get some new information, 81% To do career networking,100% To share some new information or material. The table1 below further displays the percentage distribution of purpose.

Table 1. Social Media Usage Percentage

| Purpose | No. of Answer | Percentage (%) |
|-------------------------------------------------|---------------|----------------|
| To let others know what is happening in my life | 120 | 25% |
| To keep in touch with friend | 180 | 100% |
| To connect with people I have lost touch with | 140 | 50% |
| To get some new information | 180 | 100% |
| To do career networking | 165 | 81% |
| To share some new information or materials | 180 | 100% |

Table 2

| SNSs | No. of users | Percentage (%) |
|----------|--------------|----------------|
| Facebook | 180 | 100% |
| Twitter | 155 | 69% |
| LinkedIn | 140 | 50% |
| Whatsapp | 180 | 100% |

IV. RESULTS AND DISCUSSION

Each type of constraints in the questionnaire tool analyzed using linear regression. The mean and standard deviation of questionnaire tool for all the students tabulated shown in Table 3. Then based on the regression analysis the predictive model generated the significance of R factor is 0.034.

Table 3

| Tool parameter | Mean | Std. Deviation |
|------------------------------|--------|----------------|
| Residence | 1.3125 | .46644 |
| What is happening in my life | 0.1375 | .34655 |
| Touch with friend | 1.0000 | .23300 |
| Get some new information | 1.0000 | .45435 |
| To do career networking | 1.0000 | .33255 |

The adjusted R-factor is 0.12. The significance of the prediction model is 0.763. From the result, the prediction model significance is proved as higher and it can be derived the social media usage has high influence on the interpersonal skill of the students.

V. CONCLUSION

The social media play an vital influence in learning aspects and also in interpersonal communication oriented skill. The Linear regression model predicts the usage of social media can be best and powerful predictor of learning oriented skills. The study clearly represents the statistical representation of prediction variables and their influences. The future implications may be based on data mining techniques to predict the relationships and patterns.

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